

IN THE SPECIFICATION:

Please replace all paragraphs between the paragraph starting on page 5, line 5 and continuing to page 36, line 25 with the following:

-- In order to solve the problem described above, a developer cartridge container (11) according to the first aspect of the invention is characterized by the following components (A01) and (A02).

(A01) A container body (12) including a cylindrical body (12A) having an opening (12A1) at one end and a bottom wall member (12B) provided at the other end opposite from the one end, the cylindrical body (12A) and the bottom wall member (12B) defining a developer storage chamber having the opening (12A1) for filling the developer at one end.

(A02) A closing lid (13) including a detachable portion (13e) capable of being attached to and detached from the container body (12) and a developer discharge port (13f) for closing the opening (12A1) of the developer storage chamber in a state of being attached to the container body (12).

In the first aspect of the invention, the “detachable portion (13e) capable of being attached to and detached from the container body (12)” may be configured to be capable of being attached to and detached from the container body (12) indirectly with the intermediary of a separate member, or directly without the intermediary of the separate member.

In the developer cartridge container (11) according to the first aspect of the invention in this arrangement, the container body (12) having the cylindrical body (12A) formed with the opening (12A1) at one end and the bottom wall member (12B) provided on the other end

opposite from one end is defined in the interior thereof with the developer storage chamber having the opening (12A1) at one end.

The closing lid (13) is detachably attached to the container body (12) via the detachable portion (13e), and closes the opening (12A1) of the developer storage chamber of the container body (12) in the attached state. Therefore, the opening (12A1) is closed by the closing lid (13) after the developer storage chamber is filled with the developer via the opening (12A1) of the developer storage chamber.

The developer in the developer storage chamber can be discharged out through the developer discharge port (13f) of the closing lid (13).

According to the first aspect of the invention, since the developer discharge port (13f) is provided in the closing lid (13), the structure of the container body (12) may be simplified. Therefore, when recycling (reusing), the container body (12) can be washed easily. In addition, since the closing lid (13) may be configured to be smaller with respect to the container body (12), the washing operation is easy. Therefore, working efficiency for recycling is improved.

In the developer cartridge container (11) according to the first aspect of the invention, the following components (A03) may be included.

(A03) The closing lid (13) including a cylindrical wall (13a) formed with a detachable portion (13e) capable of being attached to and detached from the container body (12), an end wall (13b) connected to an outer end of the cylindrical wall (13a) opposite from the container body (12), and a developer discharge port (13f) provided at the outer end of the cylindrical wall (13a) or the outer peripheral surface of the end wall (13b), wherein the closing lid (13) closes the

opening (12A1) of the developer storage chamber in the state of being attached to the container body (12).

In the developer cartridge container according to the first aspect of the invention including the component (A03), the end wall (13b) is connected to the outer end of the cylindrical wall (13a) of the closing lid (13) opposite from the container body (12), so that the opening (12A1) of the developer storage chamber can be closed by the end wall (13b).

The developer in the developer storage chamber can be discharged out through the developer discharge port (13f) formed on the outer end of the cylindrical wall (13a) or on the outer peripheral surface of the end wall (13b).

In the developer cartridge container according to the first aspect of the invention including the component (A03), the following components (A04) may be included.

(A04) The closing lid having a coupler mounting portion (13d) provided at the center of the end wall (12b). In the developer cartridge container according to the first aspect of the invention including the component (A04), a coupler for transmitting a rotational force to a mixing member for mixing the developer in the developer storage chamber may be provided on the coupler mounting portion (13d) provided at the center of the end wall (12b). According to the first aspect of the invention, since the coupler mounting portion (13d) and the developer discharge port (13f) are provided in the closing lid (13), the structure of the container body (12) may be simplified. Therefore, when recycling (reusing), the container body (12) can easily be washed. When washing the closing lid (13), it may be performed in a state in which the coupler is detached from or attached to the closing lid (13).

In the developer cartridge container according to the first aspect of the invention, the following components (A05) and (A06) may be included.

(A05) The closing lid ~~(13)~~ formed with a cylindrical developer discharge tube ~~(13e)~~ having an axis parallel with an axis of the cylindrical body ~~(12A)~~ of the container body ~~(12)~~,

(A06) The developer discharge port ~~(13f)~~ formed at the outer end of the developer discharge tube ~~(13e)~~.

The developer cartridge container according to the first aspect of the invention including the components (A05) and (A06), the developer in the container body ~~(12)~~ is discharged from the developer discharge port ~~(13f)~~ formed at the outer end thereof through the cylindrical developer discharge tube ~~(13e)~~ provided in the closing lid ~~(13)~~.

In the developer cartridge container according to the first aspect of the invention including the component (A03), the following components (A07) and (A06) may be included.

(A07) The cylindrical wall ~~(13a)~~ formed with the cylindrical developer discharge tube ~~(13e)~~ having an axis parallel with the axis of the cylinder body ~~(12A)~~ of the container body ~~(12)~~.

(A06) The developer discharge port ~~(13f)~~ formed at the outer end of the developer discharge tube ~~(13e)~~.

In the developer cartridge container according to the first aspect of the invention including the components (A07) and (A06), the developer in the container body ~~(12)~~ is discharged from the developer discharge port ~~(13f)~~ formed at the outer end thereof through the cylindrical developer discharge tube ~~(13e)~~ formed on the cylindrical wall ~~(13a)~~ of the closing lid ~~(13)~~.

In the developer cartridge container ~~(11)~~ according to the first aspect of the invention, the following component (A08) may be included.

(A08) The container body ~~(12)~~ formed integrally with the cylinder body ~~(12A)~~ and the bottom wall member ~~(12B)~~.

In the developer cartridge container ~~(11)~~ including the component (A08), since the cylindrical body ~~(12A)~~ and the bottom wall member ~~(12B)~~, which are the components of the container body ~~(12)~~, are integrally formed, the number of components may be reduced.

In the developer cartridge container ~~(11)~~ according to the first aspect of the invention, the following component (A09) may be included.

(A09) The container body ~~(12)~~ formed integrally with the cylinder body ~~(12A)~~ and the bottom wall member ~~(12B)~~.

In the developer cartridge container ~~(11)~~ including the component (A09), since the cylindrical body ~~(12A)~~ and the bottom wall member ~~(12B)~~, which are the components of the container body ~~(12)~~, are provided so as to be detachable, the cylindrical body ~~(12A)~~ and the bottom wall member ~~(12B)~~ may be washed in the detached state for recycling (reuse). The detached cylindrical body ~~(12A)~~ and the bottom wall member ~~(12B)~~ are small and simple in shape, the washing operation can easily be performed.

In the developer cartridge container ~~(11)~~ according to the first aspect of the invention, or in the developer cartridge container ~~(11)~~ including the component (A08) or the component (A09), the following component (A010) may be included.

(A010) The container body (12) in which a handle (12B2) that the operator can grasp is provided on the outer surface of the bottom wall member (12B) of the container body (12) and the bottom wall member (12B) and the handle (12B2) are integrally formed.

In the developer cartridge container (11) including the component (A010), since the handle (12B2) is integrally formed on the bottom wall member 12B, the operator can hold the handle (12B2) when performing the operation handling the developer cartridge container (11).

In the developer cartridge container (11) according to the first aspect of the invention including any one of the components from (A08) to (A010), the following component (A011) may be included.

(A011) A resilient thin wall container (15) for storing the developer formed of resilient thin wall material detachably accommodated in the container body (12) and formed with an opening (15e) to be disposed inside the opening (12A1) of the container body (12).

In the developer cartridge container (11) according to the first aspect of the invention including the component (A011), the resilient thin wall container (15) for storing the developer formed of a resilient thin wall material includes the opening (15e) to be disposed inside the opening (12A1) of the container body (12), and detachably accommodated in the container body (12). Therefore, the container body (12) is prevented from being stained with the developer. When the extent of stain on the container body (12) is small, the washing operation of the container body (12) for reusing the container body (12) is easy.

In the developer cartridge container (11) including the component (A011), the following component (A012) and (A013) may be included.

(A012) A cylindrical connecting member (14) including a container-body-side connecting portions ~~(14a, 14e)~~ having a cylindrical insertion member (14a) to be inserted from the opening (12A1) of the container body (12) into the container body (12) and to be detachably connected to the container body (12), and a closing-lid-side connecting portion (14b) to be connected to the detachable portion (13e) of the closing lid (13).

(A013) The resilient thin wall container (15) formed of resilient thin wall material having the opening (15e) to be fixed in a state of being adhered tightly to the outer peripheral surface of the cylindrical insertion portion (14a) of the cylindrical connecting member (14).

The cylindrical insertion member (14a) is usable as the container-body-side connecting member and in this case, it serves also as the container-body-side connecting member.

In the developer cartridge container (11) including the components (A012) and (A013), since the closing lid (13) and the cylindrical connecting member (14) being detachable to the detachable portion (13e) of the cylindrical wall (13a) are separable, and the opening (15e) of the resilient thin wall container (15) is mounted to the cylindrical insertion member (14a) provided on the cylindrical connecting member (14), the cylindrical connecting member (14) and the resilient thin wall container (15) can be disconnected from the closing lid (13) and the container body (12).

The closing lid (13) and the container body (12) can be washed and recycled (reused). When recycling, they can be washed by disconnected into the container body (12) and the closing lid (13), and in this case, since the parts to be washed are small, they can be washed easily.

Since the cylindrical connecting member (14) and the resilient thin wall container (15) are parts, which are simple in structure and at low cost, they may be configured to be thrown out, or may be recycled as material for manufacturing different parts. When the opening (15e) of the resilient thin wall container (15) is detachably mounted to the cylindrical connecting member (14), the cylindrical connecting member (14) may be washed for recycling (reuse).

In the developer cartridge container (11) including the components (A012) and (A013), the following component (A012') may be included.

(A012') The cylindrical connecting member in which a connecting portion of one of the container-body-side connecting portions (14a, 14e) and the closing-lid-side connecting portion (14b) is configured so as to be broken when disconnected after connected to the container body (12) or the closing lid (13) so that it cannot be reused.

In a developer cartridge (Ky) including the component (A012'), a connection portion of one of the container body side connecting portions (14a, 14e) and the closing lid side connecting portion (14b) of the cylindrical connecting member (14) is configured so as to be broken when disconnected after connected to the container body (12) or the closing lid (13) so that it cannot be reused. Therefore, when the spent developer cartridge (Ky) is reused, the cylindrical connecting member (14) cannot be reused. Therefore, the cylindrical connecting member (14) has to be replaced with a new one.

In the developer cartridge container (11) including the component (A011), the following components (A014)-(A016) may be included.

(A014) The cylindrical wall (13a) having the cylindrical insertion portion (13e) to be inserted into the interior of the container body (12) from the opening (12A1) of the container body (12).

(A015) A resilient thin wall container (15) including the opening (15e) to be attached in a tightly adhered state to the outer peripheral surface of the cylindrical insertion portion (13e) of the cylindrical wall (13a), the resilient thin wall container (15) being accommodated in the container body (12).

(A016) The closing lid (13) formed with an openable-closable filling port (13g) for filling developer into the resilient thin wall container (15) attached to the cylindrical insertion portion (13e) of the cylindrical wall (13a).

In the developer cartridge container (11) including the components (A014) - (A016), the resilient thin wall container (15) can be attached to the outer peripheral surface of the cylindrical insertion portion (13e) of the cylindrical wall (13a) of the closing lid (13) with the opening (15e) tightly adhered thereto. The container body (12) and the closing lid (13) may be communicated in a state in which the cylindrical wall (13a) of the closing lid (13) and the resilient thin wall container (15) attached to the cylindrical wall (13a) are accommodated in the container body (12). In this state, the developer can be filled in the resilient thin wall container (15) from the openable-closable filling port (13g) provided in the closing lid (13).

When recycling the developer cartridge container (11), the resilient thin wall container (15) which is most stained with the developer may be configured to be separable from the closing lid (13), the container body (12), or the like to throw out, or may be recycled as material

for manufacturing different parts. The closing lid (13) and the container body (12) may be washed and recycled (reused).

In the developer cartridge container (11) including the component (A011), the following component (A017) and (A018) may be included.

(A017) The resilient thin wall container (15) including the opening (15e) to be attached to the opening (12A1) of the container body (12) so as to be detachable and in a tightly adhered state, the resilient thin wall container (15) being accommodated in the container body (12).

(A018) The opening fixing members (14, 24, 25) for fixing the opening (15e) of the resilient thin wall container (15) to the opening (12A1) of the container body (12).

In the developer cartridge container (11) including the components (A017) and (A018), the opening fixing members (14, 24, 25) fix the opening (15e) of the resilient thin wall container (15) to the opening (12A1) of the container body (12). When the developer cartridge container (11) is spent, the opening (15e) of the resilient thin wall container (15) and the opening fixing members (14, 24, 25) may be disconnected from the opening (12A1) of the container body (12) to throw out, or may be recycled as material for manufacturing different parts. When the opening fixing members (14, 24, 25) are still reusable, they may be reused.

In the developer cartridge container (11) including the components (A017) and (A018), the following component (A019) may be included.

(A019) The opening fixing members (14, 25) fixed to the opening (15e) of the resilient thin wall container (15).

In the developer cartridge container (11) including the component (A019), since the opening fixing members (14, 25) are fixed to the opening (15c) of the resilient thin wall

container (15), the opening (15e) of the resilient thin wall container (15) can be fixed to the container body (12) by fixing the opening fixing member (14, 25) to the container body (12).

The developer cartridge (Ky) according to the second aspect of the present invention is characterized by the developer cartridge container (11) of the first aspect of the invention, a coupler (16) for transmitting a rotational force supported by the developer cartridge container (11); a developer mixing member (18) accommodated in the developer cartridge container (11) and connected to the coupler (16), and a discharge port opening-closing member (20) for opening and closing the developer discharge port (13f) provided on the developer cartridge container (11).

In the developer cartridge (Ky) according to the second aspect of the invention, since the developer cartridge container (11) according to the first aspect of the invention is employed, recycling operation of the developer cartridge container (11) can be performed easily when recycling the developer cartridge (Ky).

The developer cartridge (Ky) according to the third aspect of the invention is characterized by the following components (A01) and (A020)-(A024).

(A01) A container body (12) including a cylindrical body (12A) having an opening (12A1) at one end and a bottom wall member (12B) provided on the other end opposite from the one end, the cylindrical body (12A) and the bottom wall member (12B) defining a developer storage chamber having the opening (12A1) for filling developer at one end.

(A020) A closing lid (13) including a detachable portion (13e) that can be attached to and detached from the container body (12), and a cylindrical developer discharge tube (13e) extending along an axis of the cylinder (12A) of the container body (12) and being formed with a

developer discharge port (13f) at the outer end thereof, and the closing lid (13) closing the opening (12A1) of the developer storage chamber in a state of being attached to the container body (12).

(A021) A coupler (16) for transmitting a rotational force rotatably supported by the closing lid (13).

(A022) A developer mixing member (18) accommodated in the container body (12) and connected to the coupler (16).

(A023) A developer discharging auger (19) rotatably accommodated in the cylindrical developer discharge tube (13e).

(A024) A discharge port opening-closing member (20) including a fitting portion (20b) to be detachable fitted to the developer discharge port (13f), an auger connecting portion (20e) to which the outer end of the developer discharging auger (19) is connected, a shaft (20d) projecting outwardly of the developer discharge tube (13e), and a connecting portion (20f) for transmitting a rotational force provided at the outer end of the shaft (20d), the discharge port opening-closing member (20) closing the developer discharge port (13f) in a state of being fitted to the developer discharge port (13f), opening the developer discharge port (13f) in the state of being disconnected from the developer discharge port (13f), and being rotatable integrally with the auger (19) in the disconnected state.

In the third aspect of the invention, the “detachable portion (13e) capable of being attached to and detached from the container body (12)” may be configured to be capable of being attached to and detached from the container body (12) indirectly with the intermediary of a separate member, or directly without the intermediary of the separate member.

In the developer cartridge (~~K-y~~) according to the third aspect of the invention including the above-described structure, the closing lid (~~13~~) is attached to the container body (~~12~~) via the detachable portion (~~13e~~) so as to be capable of attaching to and detaching from the container body (~~12~~) and, in the attached state, closing the opening (~~12A1~~) of the developer storage chamber of the container body (~~12~~). Therefore, the opening (~~12A1~~) is closed by the closing lid (~~13~~) after the developer is filed into the developer storage chamber from the opening (~~12A1~~) of the developer storing chamber.

The developer mixing member (~~18~~) accommodated in the container body (~~12~~) rotates when the coupler (~~16~~) for transmitting a rotational force rotatably supported by the closing lid (~~13~~) and mixes the developer in the container body (~~12~~).

The developer discharge port (~~13f~~) at the outer end of the cylindrical developer discharge tube (~~13e~~) provided in the closing lid (~~13~~) is closed when the fitting portion (~~20b~~) of the discharge port opening-closing member (~~20~~) is fitted. The developer discharge port (~~13f~~) is opened when the fitting portion (~~20b~~) of the discharge port opening-closing member (~~20~~) is disconnected from the developer discharging port (~~13f~~) so as to be capable of discharging the developer in the developer storage chamber to the outside.

The discharge port opening-closing member (~~20~~) having the fitting portion (~~20b~~) of the discharge port opening-closing member (~~20~~), which is detachably fitted to the developer discharge port (~~13f~~), includes a shaft (~~20d~~) projecting outwardly of the developer discharge tube (~~13e~~), and a connecting portion (~~20f~~) for transmitting a rotational force provided at the outer end of the shaft (~~20d~~). The discharge port opening-closing member (~~20~~) is rotated by the rotating member connected to the connecting portion (~~20f~~) for transmitting a rotational force in a state in

which the fitting portion (20b) of the discharge port opening-closing member (20) is disconnected from the developer discharge port (13f).

The outer end of the developer discharging auger (19) rotatably accommodated in the cylindrical developer discharge tube (13e) is connected to the auger connecting portion (20e) of the discharge port opening-closing member (20). When the discharge port opening-closing member (20) is rotated in a state in which the fitting portion (20b) of the discharge port opening-closing member (20) is disconnected from the developer discharge port (13f) and the developer discharge port (13f) is opened, the developer discharging auger (19) in the developer discharge tube (13e) rotates, and the developer in the developer storage chamber is discharged from the developer discharge port (13f) through the developer discharge tube (13e).

According to the developer cartridge (Ky) of the third aspect of the invention, the developer discharge port (13f) is provided in the closing lid (13). The coupler (16) for rotating the developer mixing member (18) for mixing the developer in the container body (12) and the discharge port opening-closing member (20) for rotating the developer discharging auger (19) are disposed not on the side of the container body (12), but on the side of the closing lid (13). Therefore, since the structure of the container body (12) is simplified, the container body (12) can easily be washed for recycling (reuse). In addition, since the closing lid (13) may be formed into a compact configuration in comparison with the container body (12), it can be washed easily. Therefore, working efficiency for recycling may be improved.

The developer cartridge (Ky) of the third aspect of the invention may include the following component (A025).

(A025) The developer discharging auger formed of a coil spring.

In the developer cartridge (~~Ky~~) including the component (A025), the developer discharging auger (~~19~~) is formed of the coil spring, and the outer end of the coil spring is connected to the discharge port opening-closing member (~~20~~). When the fitting portion (~~20b~~) of the discharge port opening-closing member (~~20~~), being fitted to the developer discharge port (~~13f~~) and hence closing the developer discharge port (~~13f~~), is disconnected from the developer discharge port (~~13f~~) and hence opens the developer discharge port (~~13f~~), the coil spring (~~19~~) in the developer discharge tube (~~13e~~) moves outwardly, or extends from the compressed state. At this time, the developer in the developer discharge tube (~~13e~~) is fluidized and hence its flowing property is improved. Therefore, the developer in the developer discharge tube (~~13e~~) may be prevented from being cured and hence lowered in flowing property.

The developer cartridge (~~Ky~~) according to the third aspect of the invention may include the following component (A011).

(A011) A resilient thin wall container (~~15~~) for storing developer formed of resilient thin wall material detachably accommodated in the container body (~~12~~) and having an opening (~~15e~~) to be disposed inside the opening (~~12A1~~) of the container body (~~12~~).

In the developer cartridge (~~Ky~~) including the component (A011), the resilient thin wall container (~~15~~) for storing the developer formed of a resilient thin wall material includes the opening (~~15e~~) to be disposed inside the opening (~~12A1~~) of the container body (~~12~~), and detachably accommodated in the container body (~~12~~). Therefore, the container body (~~12~~) is prevented from being stained with the developer. When the extent of stain on the container body (~~12~~) is small, the washing operation of the container body (~~12~~) for reusing the container body (~~12~~) may be performed easily.

An image forming unit according to the fourth aspect of the invention is characterized in that the developer cartridge container (11) according to the first aspect of the invention or the developer cartridge (Ky) according to the second or third aspect of the invention is employed.

In the image forming unit according to the third aspect of the invention, since the developer cartridge container (11) according to the first aspect of the invention or the developer cartridge (Ky) according to the second or the third aspect of the invention is used, the developer cartridge container (11) according to the first aspect of the invention is used. Therefore, the recycling operation of the developer cartridge container (11) may be performed easily when recycling the image forming unit.

A method of recycling a developer cartridge container (11) according to the fifth aspect of the invention including: a container body (12) including a developer storage chamber having an opening (12A1) at one end; a cylindrical wall (13a) having a cylindrical insertion portion (13e) to be inserted from the opening (12A1); a closing lid (13) including an end wall (13b) connected to the outer end opposite from the cylindrical insertion portion (13e) of a cylindrical wall (13a) and having a coupler mounting portion (13d) and an openable and closable filling port (13g), and a developer discharge port (13f), the closing lid closing the opening (12A1) of the developer storage chamber in a state of being fitted to the container body (12); a resilient thin wall container (15) having an opening (15e) to be attached in a tightly adhered state to the outer peripheral surface of the cylindrical insertion portion (13e) of the cylindrical wall (13a) and accommodated in the container body (12); wherein the resilient thin wall container (15) is not reused and the container body (12) and the closing lid (13) are washed and reused.

According to the method of recycling the developer cartridge container (11) of the fifth aspect of the invention including the above-described components, the opening (15e) of the resilient thin wall container (15) is attached to the outer peripheral surface of the cylindrical insertion portion (13e) of the cylindrical wall (13a) of the closing lid (13) in a tightly adhered state, and the container body (12) and the closing lid (13) are detachably connected in a state in which the cylindrical insertion portion (13) and the resilient thin wall container (15) are inserted into the container body (12). In this state, the developer can be filled into the resilient thin wall container (15) from the filling port (13g).

When recycling the developer cartridge container (11), the opening (15e) of the resilient thin wall container (15) is disconnected from the cylindrical insertion portion (13e) of the closing lid (13). Since the resilient thin wall container (15) used here may be the one being simple in structure and less expensive, it may be thrown out without reusing, or reused as material for manufacturing different parts. The closing lid (13) and the container body (12) are washed and recycled (reused).

A method of recycling a developer cartridge container (11) according to the sixth aspect of the invention including: a container body (12) including a developer storage chamber having an opening (12A1) at one end; a closing lid (13) including a cylindrical wall (13a) formed with a detachable portion (13e) capable of being attached to and detached from the container body (12), an end wall (13b) connecting the outer end of the cylindrical wall (13a) on the opposite side from the container body (12) and having a coupler mounting portion (13d), and an developer discharge port (13f) formed in the cylindrical wall (13a) or the end wall (13b), for closing the opening (12A1) of the developer storage chamber in a state of being attached to the container

body (12); a resilient thin wall container (15) including an opening (15e) to be attached to the opening (12A1) of the container body (12) in a tightly adhered state, the resilient thin wall container (15) being accommodated in the container body (12), wherein the resilient thin wall container (15) is not reused, and the container body (12) and the closing lid (13) are washed and reused.

In the recycling method of the developer cartridge container (11) according to the sixth aspect of the invention including the above-described components, the developer cartridge container (11), when it is recycled, is divided into the closing lid (13) having the coupler mounting portion (13d) and the developer discharge port (13f) and the container body (12), and each of them are washed and recycled. Since the coupler mounting portion (13d) and the developer discharge port (13f) are provided in the closing lid (13), the structure of the container body (12) is simplified. Therefore, the container body (12) can easily be washed when recycling (reusing).

Since the closing lid (13) is formed with the coupler mounting portion (13d) and the developer discharge port (13f), the configuration of the closing lid (13) is complicated. However, since it can be provided into a compact configuration in comparison with the container body (12), the washing operation is not too difficult. Therefore, the working efficiency for recycling is improved.

The resilient thin wall container (15) which tends to be stained much is thrown out without reusing or recycled as material for manufacturing different parts. Therefore, since the resilient thin wall container (15) is not necessary to wash, the working efficiency for recycling is improved.

A method of recycling a developer cartridge container (11) according to the seventh aspect of the invention including: a container body (12) including a developer storage chamber having an opening (12A1) at one end; a closing lid (13) including a cylindrical wall (13a), an end wall (13b) connected to the cylindrical wall (13a) and having a coupler mounting portion (13d), a developer discharge port (13f) formed in the end wall (13b) or the cylindrical wall (13a), and a detachable portion (13e) detachable to the container body (12); a cylindrical connecting member (14) including a container-body-side connecting portion (14e) having a cylindrical insertion portion (14a) to be inserted from the opening (12A1) of the container body (12) into the container body (12) and being detachably connected to the container body (12) at one end and a closing-lid-side connecting portion (14b) being connected to the detachable portion (13e) of the closing lid (13) at the other end; and a resilient thin wall container (15) having an opening (15e) to be attached to the outer peripheral surface of the cylindrical insertion portion (14a) of the cylindrical connecting member (14) in a tightly adhered state and being accommodated into the container body, wherein the resilient thin wall container (15) is not reused and the container body (12) and the closing lid (13) are washed and reused.

In the method of recycling the developer cartridge container (11) according to the seventh aspect of the invention including the above-described components, the opening (15e) of the resilient thin wall container (15) is attached to the outer peripheral surface of the cylindrical insertion portion (14a) of the cylindrical connecting member (14) in a tightly adhered state, and the resilient thin wall container (14) is mounted to the container body (12) in a state in which the resilient thin wall container (15) is accommodated in the container body (12). In this state, the developer is filled from the opening (15e) of the resilient thin wall container (15) into the interior

thereof. In this state, the closing lid (13) is directly connected to the container body (12) or indirectly via the cylindrical connecting member (14). In this state, the developer cartridge container (11) is used.

When recycling the developer cartridge container (11), the cylindrical connecting member (14) to which the resilient thin wall container (15) is mounted is disconnected from the container body (12). Since the cylindrical connecting member (14) and the resilient thin wall container (15) that can be employed here may be the one which is simple in structure and low in costs, it is thrown out without reusing, or recycled as material for manufacturing different parts. The lid member (13) and the container body (12) are washed and recycled (reused). When the cylindrical connecting member (14) is in the state of reusable, it can be reused.

A method of recycling a developer cartridge container (11) according to the eighth aspect of the invention including: a container body (12) including a developer storage chamber having an opening (12A1) at one end; a closing lid (13) including a cylindrical wall (13a), an end wall (13b) connected to the cylindrical wall (13a) and having a coupler mounting portion (13d), a developer discharge port (13f) provided on the end wall (13b) or the cylindrical wall (13a), and a detachable portion (13e) detachable to the container body (12); a cylindrical connecting member (14) including a container-body-side connecting portion (14e) having a cylindrical insertion portion (14a) to be inserted from the opening (12A1) of the container body (12) into the container body (12) and being detachably connected to the container body (12) at one end and a closing-lid-side connecting portion (14b) to be connected to the detachable portion (13e) of the closing lid (13) at the other end; and a resilient thin wall container (15) having an opening (15e) to be attached to the outer peripheral surface of the cylindrical insertion portion (14a) of the

cylindrical connecting member (14) in a tightly adhered state and to be accommodated in the container body (12), wherein the spent developer cartridge container (11) is disassembled into the container body (12), the closing lid (13), and the cylindrical connecting member (14) to which the resilient thin wall container (15) is mounted, and in that the resilient thin wall container (15) and the cylindrical connecting member (14) are not reused, and the developer cartridge container (11) is formed by assembling the washed container body (12), the washed closing lid (13), a new resilient thin wall container (15), and a new cylindrical connecting member (14).

In the method of recycling the developer cartridge container (11) according to the eighth aspect of the invention, the spent developer cartridge container (11) is disassembled into the container body (12), the closing lid (13), and the cylindrical connecting member (14) to which the resilient thin wall container (15) is mounted. The resilient thin wall container (15) and the cylindrical connecting member (14) are not reused. The container body (12) and the closing lid (13) are washed and assembled with a new resilient thin wall container (15) and a new cylindrical connecting member (14) into the developer cartridge container (11).

Therefore, while the closing lid (13) and the container body (12) are washed and recycled (reused), since the cylindrical connecting member (14) and the resilient thin wall container (15) employed here may be those which are simple in structure and low in costs, they are thrown out without reusing, or recycled as material for manufacturing different parts.

A method of recycling the developer cartridge container (11) according to the ninth aspect of the invention including: a container body (12) including an developer storage chamber having an opening (12A1) at one end; a closing lid (13) including a cylindrical wall (13a), an end

wall (13b) connected to the cylindrical wall (13a) and having a coupler mounting portion (13d), a developer discharge port (13f) provided on the end wall (13b) or the cylindrical wall (13a), and a detachable portion (13e) detachable to the container body (12); a cylindrical connecting member (14) including a container-body-side connecting portion (14e) having a cylindrical insertion portion (14a) to be inserted from the opening (12A1) of the container body (12) into the container body (12) and being detachably connected to the container body (12) at one end and a closing-lid-side connecting portion (14b) being connected to the detachable portion (13e) of the closing lid (13) at the other end, a connecting portion of one of the container-body-side connecting portion (14e) and the closing-lid-side connecting portion (14b) being configured so as to be broken when detached after connected to the container body (12) or the closing lid (13) so that it cannot be reused;

a resilient thin wall container (15) having an opening (15e) to be attached to the outer peripheral surface of the cylindrical insertion portion (14a) of the cylindrical connecting member (14) in a tightly adhered state, being formed of the same material as the cylindrical connecting member, and accommodated in the container body, wherein the spent developer cartridge container (11) is disassembled into the container body (12), the lid member (13), and the cylindrical connecting member (14) to which the resilient thin wall container (15) is mounted, and in that the cylindrical connecting member (14) and the resilient thin wall container (15), which are broken when disassembled and hence are disabled, are not reused, and the developer cartridge container (11) is formed by assembling the washed container body (12), the washed closing lid (13), a new resilient thin wall container (15), and a new cylindrical connecting member (14).

In the method of recycling the developer cartridge container (11) according to the ninth aspect of the invention of the present application, one of the connecting portions of the container-body-side connecting portion (14e) and the closing-lid-side connecting portion (14b) of the cylindrical connecting member (14) is configured so as to be broken when disconnected after connected to the container body (12) or the closing lid (13) so that it cannot be reused.

Therefore, the spent developer cartridge container (11) is disassembled into the container body (12), the closing lid (13), and the cylindrical connecting member (14) on which the resilient thin wall container (15) is mounted. The cylindrical connecting member (14) and the resilient thin wall container (15), which are broken when disassembled and hence are disabled, are not reused. The reusable container body (12) and closing lid (13) are washed, and they are assembled into the developer cartridge container (11) by combining with a new cylindrical connecting member (14) and a new resilient thin wall container (15).

Since the cylindrical connecting member (14) and the resilient thin wall container (15) are formed of the same material, they can easily be recycled as material for manufacturing different parts without being disconnected.

A method of recycling a developer cartridge container (11) according to the tenth aspect of the invention of the present application is a method of recycling the developer cartridge (K-y) including: a container body (12) including an developer storage chamber having an opening (12A1) at one end; a closing lid (13) including a cylindrical wall (13a), an end wall (13b) connected to the cylindrical wall (13a) and having a coupler mounting portion (13d), a developer discharge port (13f) provided on the end wall (13b) or the cylindrical wall (13a), and a detachable portion (13e) detachable to the container body (12); a cylindrical connecting member

(14) including a container-body-side connecting portion (14e) having a cylindrical insertion portion (14a) to be inserted from the opening (12A1) of the container body (12) into the container body (12) and being detachably connected to the container body (12) at one end and a closing-lid-side connecting portion (14b) being connected to the detachable portion (13e) of the closing lid (13) at the other end, a connecting portion of one of the container-body-side connecting portion (14e) and the closing-lid-side connecting portion (14b) being configured so as to be broken when disconnected after connected to the container body (12) or the closing lid (13) so that it cannot be reused; a resilient thin wall container (15) having an opening (15e) to be attached to the outer peripheral surface of the cylindrical insertion portion (14a) of the cylindrical connecting member (14) in a tightly adhered state being formed of the same material as the cylindrical connecting member, and accommodated in the container body; a coupler (16) for transmitting a rotational force rotatably supported at the center of the end wall of the closing lid (13); a developer mixing member (18) accommodated in the developer cartridge container (11) and connected to the coupler (16); a developer discharging auger (19) rotatably accommodated in the cylindrical developer discharge tube (13e); a discharge port opening-closing member (20) including a fitting portion (20b) to be detachably fitted to the developer discharge port (13f), an auger connecting portion (20e) to which the outer end of the developer discharging auger (19) is connected, a shaft (20d) projecting outwardly of the developer discharge tube (13e), and a connecting portion for transmitting a rotational force provided at the outer end of the shaft (20d), the discharge port opening-closing member (20) closing the developer discharge port (13f) in a state of being fitted to the developer discharge port (13f), opening the developer discharge port (13f) in a state of being disconnected from the developer discharge port (13f), and being

rotatable integrally with the developer auger (19) in the disconnected state wherein the spent developer cartridge (~~K-y~~) is disassembled into the container body (12), the closing lid (13) to which the coupler (16) and the developer mixing member (18) are mounted, the discharge port opening-closing member (20) to which the developer discharge auger (19) is connected, and the cylindrical connecting member (14) to which the resilient thin wall container (15) is mounted, and in that the cylindrical connecting member (14) and the resilient thin wall container (15), which are broken when disassembled and hence are disabled, are not reused, the container body (12), the closing lid (13) to which the coupler (16) and the developer mixing member (18) are mounted, and the discharge port opening-closing member (20) to which the auger (19) is connected are washed, and the developer cartridge (~~K-y~~) is formed by assembling the washed parts with a new cylindrical connecting member (14) and a new resilient thin wall container (15).

In the method of recycling the developer cartridge container (11) according to the tenth aspect of the invention, the spent developer cartridge (~~K-y~~) is disassembled into the container body (12), the closing lid (13) to which the coupler (16) and the developer mixing member (18) are mounted, the discharge port opening-closing member (20) to which the developer discharge auger (19) is connected, and the cylindrical connecting member (14) to which the resilient thin wall container (15) is mounted.

The cylindrical connecting member (14) and the resilient thin wall container (15), which are broken when disassembled and thus are disabled, are not reused. The container body (12), the closing lid (13) to which the coupler (16) and the developer mixing member (18) are mounted, and the discharge port opening-closing member (20) to which the auger (19) is

connected are washed, and the developer cartridge (~~Ky~~) is formed by assembling the washed parts with a new cylindrical connecting member (~~14~~) and a new resilient thin wall container (~~15~~).

Since the cylindrical connecting member (~~14~~) and the resilient thin wall container (~~15~~) are formed of the same material, they can easily be recycled as a material for manufacturing different parts without being disconnected.

The developer container used in the image forming unit and the developer cartridge of the present invention described above has the following effects (E01) and (E02). --